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Superficial Venous Pathology in the Asian Population of South West London – A Prospective Study

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Objectives. *The Asian population of our hospital catchment area represents 6.2% of the total, which is 3.2% higher than the national average, compared to the Caucasian population which comprises 70.2% and is 21.9% lower than the national average. This study aimed to analyse the prevalence and presentation of superficial venous disease (SVD) in the Asian population of South West London.*
Methods. *A prospectively gathered database of all 481 patients referred by local general practitioners (GP) to the varicose veins nurse specialist over a 24 month period was analyzed. Information was collected on demographics, presenting features, clinical signs, and whether surgical referral was made.*
Results. *Asians presented significantly younger than Caucasians* ($p < 0.0001$; *unpaired t-test). Caucasians had a significantly higher positive family history than Asians* ($p \leq 0.05$; *chi-squared test). SVD severity was graded using the CEAP (clinical, etiological, anatomical, pathophysiological) classification. Asians had significantly more severe disease than Caucasians* ($p \leq 0.01$; *chi-squared test). There were no differences in sex distribution.*
Conclusion. *Asians presented younger with more severe disease than their Caucasian counterparts. The reasons for these findings are unclear, but probably represent a combination of genetic, environmental and social factors. Further research is in progress to investigate this.*

Keywords: Varicose veins; Venous disease; Asian.

Introduction

In the United Kingdom (U.K), the prevalence of superficial venous disease (SVD) and its sequelae is high. The disease spectrum is broad and ranges from varicose veins (30–50%) through itching and aching, to skin changes (10%) and ulceration (1%).[1,2,3] It is not surprising therefore that this puts a significant socioeconomic burden on the health service accounting for over 500,000 general practitioner attendances[4] 1–2% of National Health Service (NHS) spending, 85,000 operations[5] and 270 000 bed days.[6]

The health burden of SVD can be divided into the symptoms resulting from the initial venous pathology such as aching, itching, bleeding and cosmetic disfigurement, and the chronic results of superficial venous hypertension such as pigmentation and venous ulceration, which costs the NHS in excess of £400 million per year.[4]

Mayday University hospital serves the population of Croydon in South West London with a catchment population of 340,000. The ethnic population comprises 29.8% of this total, and the Asian population makes up 6.2% (national average 3.0%).[7] Despite the high prevalence of Asians in the UK population there is a marked paucity of published data on the prevalence and presentation of superficial venous disease in this important sub-group.

This study was designed to investigate the demographics, prevalence, presentation and severity of superficial venous disease in the Asian population.

Methods

A prospectively gathered database of all patients referred by local general practitioners (GP) to the varicose veins nurse specialist over a 24 month period was analyzed. Information was obtained during the appointment from review of the notes, direct patient interview and clinical examination. An established

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standardized questionnaire was used to collect data on demographics, presenting features, initial clinical examination findings, and whether further surgical referral was made.

Signs examined for were the presence of varicose veins, reticular veins, ankle flare, oedema, pigmentation, varicose eczema, induration, atrophie blanche, inflammation or ulceration. Differences were tested for significance using the unpaired t-test and chi squared test.

Within South West London the Caucasian community has a prevalence of 70.2%, the Asian community has a prevalence of 6.2%, and the remaining ethnic population has a combined prevalence of 23.6%. In this study, Asians were defined as patients from India, Pakistan, Bangladesh, Sri Lanka or other members of the Indian subcontinent. All other ethnic minorities were defined as not Asian. Caucasians were defined as patients from Britain, Ireland and any other white background.

Results

A total of 481 patients were seen in clinic over the 24 month period. The prevalence of Caucasians in South West London is 70.2% whereas the absolute number of Caucasians referred by their GP in this study was 403 (83.8%), which is 13.6% more than we would expect. Similarly, the prevalence of Asians in South West London is 6.2% whereas the absolute number of Asians referred was 78 (16.2%), which is 10% more than we would expect. Interestingly there were no representatives of the remaining ethnic populations in those presenting with SVD despite this forming 23.6% of the local population.

The ethnic mix within Asians presenting with SVD is shown in Fig. 1. The demographics of patients attending the varicose veins clinic according to gender are presented in Table 1. The distribution of gender was similar between groups, with 22 (28%) Asians being male compared to 117 (29%) Caucasians ($p = 1$; chi-squared test). In contrast, Asians tended to be younger when first presenting at the clinic; the mean age amongst Asians was 46.8 years compared to 54.9 years amongst Caucasians ($p \leq 0.0001$; unpaired t-test). Caucasians were more likely to have a positive family history of SVD, with 169 (42%) Caucasians with a positive family history compared to 23 (29%) Asians.

The distribution of bilateral disease was similar between groups, with 210 (52%) Caucasians with bilateral disease compared to 36 (46%) Asians ($p = 1$; chi-squared test).

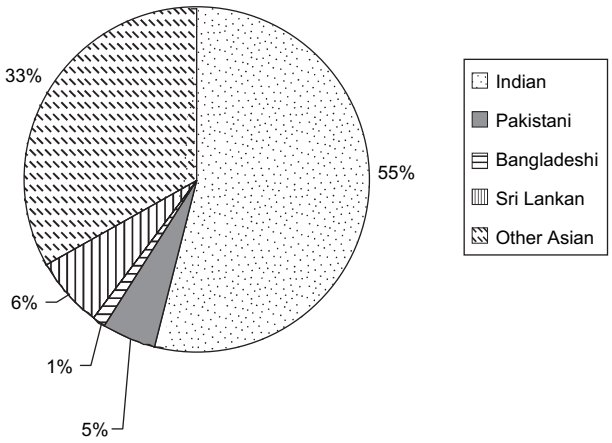

Fig. 1. The ethnic mix within the Asian group.

The distribution of examination signs is shown in Fig. 2a,b. The most common sign in both populations was varicose veins (94% Asians, and 84% Caucasians). Asians were more likely to have pigmentation, with 27 (35%) Asians with pigmentation compared to 85 (21%) Caucasians ($p \leq 0.01$; chi-squared test).

SVD severity in Asians and Caucasians is presented in Table 2. The number of clinical signs evident in each patient at presentation was used to grade disease severity. When comparing the number of clinical signs between the Asian and Caucasian populations, there was an overall significant difference ($p \leq 0.05$; chi-squared test) between the two groups. It can be seen that this difference is due to a tendency for the Caucasian population to have fewer clinical signs at presentation when compared to the Asian group.

The severity of disease was also graded using CEAP (clinical, etiological, anatomical, pathophysiological) classification, which also confirmed a significant difference between the two groups ($p \leq 0.01$; chi-squared test). It can be seen that Caucasians have a tendency towards mild disease (Grade 0–3) when compared with the Asian population who have a higher percentage of the more severe CEAP score (4–5). It should be noted that CEAP score 6 (i.e. open venous ulcers) did not feature here as they were sent directly to the Consultant Vascular Surgeon rather than the nurse led clinic for initial assessment.

Table 1. Demographics of patients attending clinic

		Asians	Caucasians	*p*-value
Total		78 (100%)	403 (100%)	
Gender	Male	22 (28%)	117 (29%)	1
	Female	56 (72%)	286 (71%)	
Age	Mean	46.79	54.88	≤0.0001
Family history	Yes	23 (29%)	169 (42%)	0.05

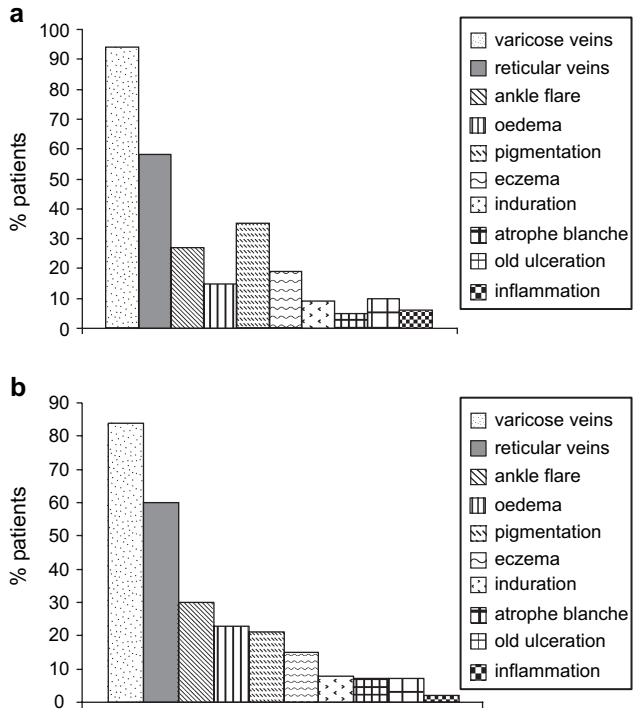

Fig. 2. a. Percentage of Asians with each clinical sign. **b.** Percentage of Caucasians with each clinical sign.

Discussion

In the multicultural society within which we live, superficial venous pathology forms a major health burden and as such, understanding the different needs of the components within this society is vital to the effective delivery of health care. Despite the rising ethnic influences within our society, there still exists very little information regarding the prevalence and presenting features of SVD within the Asian population.

Hobbs *et al* showed that Asians were 40% less likely to undergo superficial venous surgery than their Caucasian counterparts[8] and were also shown to be grossly under represented in the female population. The study interrogated a prospectively collected database concentrating on all patients who underwent superficial venous surgery and also showed that Asians undergoing superficial venous surgery were statistically more likely to be younger (mean age 41 vs 49 years) and to have more severe disease at presentation.

Our study analysed the data from 481 consecutive patients presenting with SVD irrespective of operative intervention and found similar results. Asian patients presented significantly younger with significantly worse disease than their Caucasian counterparts. Unlike the previous study however, we found that there was no difference in the sex distribution between males and females in the two groups and rather than being under-represented, the prevalence of SVD in Asians was 10% greater than that expected.

It is likely that these differences are due to a mixture of genetic, cultural and economic factors.

From our family history data, it would appear that Caucasians are significantly more likely to admit to a positive family history than Asians. This may be due to a true difference in transmission between Asian and Caucasian families or more likely is due to the reluctance to report medical conditions within Asian families where they were considered a social stigma.

Table 2. Severity of disease in Asians and Caucasians

		Asians	Caucasians	*p*-value
Total		78 (100%)	403 (100%)	
Number of clinical signs on presentation	0	0 (0%)	9 (2.2%)	≤0.05
	1	21 (26.9%)	91 (22.6%)	
	2	19 (24.4%)	129 (32.0%)	
	3	18 (23.1%)	86 (21.3%)	
	4	5 (6.4%)	50 (12.4%)	
	5	4 (5.1%)	21 (5.2%)	
	6	3 (3.9%)	9 (2.0%)	
	7	4 (5.1%)	3 (0.7%)	
	8	3 (3.9%)	8 (1.2%)	
	9	1 (1.3%)	1 (0.3%)	
CEAP score	0	0 (0%)	20 (5.0%)	≤0.01
	1	2 (2.6%)	16 (4.0%)	
	2	45 (57.7%)	239 (59.3%)	
	3	4 (5.1%)	52 (12.9%)	
	4	19 (24.4%)	48 (11.9%)	
	5	8 (10.3%)	28 (7.0%)	

Conclusion

Although the differences between the Asian and Caucasian populations is likely to be due to mixed aetiology it is difficult to explain from a pure socio-economic standpoint. If the Asian population were more reluctant to present with superficial venous pathology they would be expected to present with more severe initial pathology but at an older age. This was not the case. The reasons for these differences may lie partly within the different occupations/exercise patterns within the Asian community of South West London, and partly within potential differences in the patterns of venous reflux or the anatomy of the superficial veins in the two groups.

Further research is in progress to investigate the different occupational and exercise profiles in these groups, and to examine the different patterns of venous reflux within both groups using colour duplex

assessment. This will be able to give a more accurate assessment of both junctional reflux, perforator reflux and any other abnormal connections between the superficial and deep venous systems.[9,10,11] In addition, cross-sectional studies are required to establish the pattern of venous disease within the Asian population as a whole. By definition, the Asian patients in this study were motivated to seek help and were found to be suffering from worse disease at a younger age than their Caucasian counterparts. It may be that there is a portion of this society that have significant SVD at a young age and are not seeking treatment because of social stigma. It is only through a greater understanding of the extent of the problem within the Asian society that this can be correctly addressed.

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